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CENTRAL INTELLIGENCE AGENCY
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OSI SURVEY REPORTFiled by
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Two major problems have been raised in connection with the OSI survey; namely-

1. The place of OSI in the intelligence community. This problem involves a reconsideration of the mission and functions of OSI as set forth in CIA Regulation 70; the mission and functions of the Scientific Intelligence Committee (SIC) as set forth in DCI 3/3; and the relationship of OSI to the scientific intelligence efforts of other Intelligence Advisory Committee (IAC) Agencies.
2. The primary deficiency of our scientific intelligence production which is basically a failure in the collection of significant raw intelligence.

Other problems were encountered in the survey but, because of their relative unimportance, this report will discuss them separately after considering the two major problems.

I.

MAJOR PROBLEMS1. The Place of OSI in the Over-All Intelligence Community

The production of scientific intelligence involves problems which are distinct from and in a sense more difficult than the problems involved in other intelligence production; economic, for example. This is primarily because (a) there is a dearth of competent personnel available for scientific intelligence (there is no reservoir of men trained in both science and intelligence) and (b) our need for scientific intelligence goes far beyond our capacity to obtain raw intelligence susceptible of accurate evaluation. This is a complaint which is common to the entire intelligence community but it has special significance in relation to Scientific Intelligence for several reasons. First, the average collector does not have the knowledge to recognize

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Mr. Stuart Hedden, Inspector General, 21 Mar 52

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scientific facts of significance to scientific intelligence when he sees them. Secondly, the very rapid development of science throughout the world in recent years has made possible scientific warfare of such immediate and large destructive capacity that a premium is placed upon obtaining scientific intelligence. (A passing thought to the possibilities of atomic warfare, bacteriological warfare, chemical warfare, guided missiles, and rockets is convincing without proof on this point.) Thirdly, by virtue of the secrecy with which applied science is generally surrounded in industry, scientific information lends itself readily to concealment even in a democracy and can be held reasonably safe from penetration in a police state.

It must also be recognized that scientific intelligence is a relatively new concept. There is attached, marked Tab A, a summary of background information on the development of scientific intelligence. In Tab A, reference is made to a series of surveys of the problem before OSI was established, all pointing up a peculiar need for a highly centralized scientific intelligence service. Largely because of the weight given to such independent recommendations for centralized scientific intelligence, OSI declared for itself in CIA Regulation 70, Tab B attached, a statement of mission and functions which conflicts with DCI 3/3 (see below) and organized itself to perform such centralized functions as indicated by the attached organization chart, Tab C. Collection of scientific intelligence has been assigned by NSCID 10 to State as to basic sciences and to the Armed Services to meet requirements of the military establishment, but, as shown below, present collection methods have to some extent made this directive obsolete.

Conflict with Service Departments

The effort effectively to centralize scientific and technical intelligence has conflicted with what the Services, with considerable justification, believe to be their exclusive prerogatives in this field. To attain proper coordination, a Scientific Intelligence Committee (SIC), composed of representatives of the

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Service arms, State, the Atomic Energy Commission, and CIA was set up under NSCID 3, pursuant to which a directive, DCI 3/3, provided for working committees in the several specific substantive fields of scientific intelligence. This program, which if it functioned as planned is perhaps the best coordinating vehicle that can be set up under the actual situation in the intelligence community, is now breaking down. Although the working committees are still functioning well in the field of atomic energy and reasonably well in the field of chemistry, they are not functioning at all in the field of electronics and, at the instance of the military, the subcommittees of SIC on electronics, guided missiles and chemical warfare have been voted abolished, as Defense feels these fields the exclusive competence of Defense. Yet these fields are the very ones which overlap strictly departmental interests. Further, the Joint Chiefs of Staff have just recently established a Joint Chiefs Technical Intelligence Subcommittee (JTIS) which adds another arm to the scientific intelligence body which without clarification can only result in further confusion. The directive of JTIS is in direct conflict with the SIC directive.

Two examples from recent experiences of OSI with Service branches indicate how seriously our capacities in scientific intelligence are affected by the conflict which has arisen with the Service branches. The first relates to photographs which A-2 took of what are possibly guided missile launching ramps in Eastern Asia. The Technical Capabilities Branch of A-2 objected to OSI seeing the pictures; yet what may prove to be important intelligence would have been denied to the community had OSI not seen these photographs. Eight weeks ago, OSI asked for the negatives so that they could blow them up and give better study to what they interpret to be the ramps. The negatives are still in the Far East Command. The second example relates to an idea advanced in the Joint Medical Intelligence Committee of SIC that by drawing a drop of blood from a POW with each immunizing

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injection, we are able to learn what disease the prisoner has been inoculated against or immunized against by exposure or inheritance and from this information to determine to what diseases such a prisoner would be prone. With enough of such samples obtained in Korea, for example, it would be possible to plot a map of China indicating what areas are immune to certain diseases and susceptible to others, which might be intelligence of great value for biological warfare. OSI was requested to carry such a program out. No success in initiating this program has been obtained, partly because of the community's attitude with respect to separating intelligence and operations into pigeonholes isolated from each other.

A good case can be made that the ideal to meet the national requirements of scientific and technical intelligence would be a strong centralized group under single direction, as recommended in the reports referred to in Tab A. This is not only because of the dearth of adequate competent personnel and the existence of needs beyond our capabilities referred to above, but also because of the risk of omission and oversight without centralization; the limitations imposed by departmentalization because of the exclusive interest of the parent department in its own mission; the inseparability of scientific disciplines and the overlapping of fields (electronics, for example, are vital to guided missiles, radar, communications, navigation, anti-submarine and anti-aircraft weapons and certain fuses). Further, the most prolific source of information on Russian scientific development is the open literature which can best be exploited under a single authority.

Regardless of the ideal, it seems clear that the Services will not forego independent scientific and technical intelligence production nor is it important to CIA that American collection and production be on an ideal basis so long as the job is done to the utmost of the capabilities of the combined intelligence community. The problem cannot be solved within CIA alone and is considered by the undersigned important enough to justify a reopening of the question on NSC levels for a new determination of the respective

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responsibilities of the different agencies. Part of the difficulties encountered with G-2 clearly spring from its conviction that in some fields, particularly with relation to ground weapons, CIA is transgressing on territory of particular and exclusive interest to the Army. Difficulty with this position, from the surveyors' viewpoint, is the present restricted capacity of G-2 in the scientific field. The force under Dr. Woodruff has been reduced to six men and, sympathetic as we may be with the fundamental Army position, we feel great hesitancy in recognizing its validity where the competence is so restricted not by reason of the lack of quality of the individuals on board but by an apparent lack of appreciation of the problem on policy making levels. Recommendations below are made subject to this caveat and are invalid unless their acceptance involves a basic change of policy by the Service arms, and an open acceptance by them for the whole community of the recommended responsibilities.

Recommendations

It is recommended that CIA Regulation 70, relating to OSI, be amended to clarify the responsibilities of OSI in accordance with Tab E; and that a new NSCID be suggested, in accordance with Tab D, assigning to the Service arms full responsibility for the production of technical intelligence; i.e., intelligence relating to weapons and means of warfare which have been reduced to known prototypes, leaving to CIA responsibility (and power) in the technical intelligence fields only to the extent (a) that a Service arm shall request such CIA interest in any specific instance and (b) that one or more of the Services will not accept complete responsibility with respect to new developments to which CIA may call attention. Exceptions (a) and (b) are essential in order that no gaps may be permitted in our over-all scientific and technical intelligence coverage. The primary responsibility of CIA in the scientific intelligence field would then be restricted to scientific intelligence; i. e. intelligence with respect to research and its implications, and to developments in the pilot plant stage before they

are reduced to known prototypes. It is our hope that an offer to the military along these lines will remove many of the sources of friction which are impeding our scientific intelligence production today and that, whether or not the military authorities accept this suggestion, its very presentation may evoke a more workable climate in the scientific intelligence community.

The proposed division of responsibility would follow the British system, as indicated in Tab A. It should also be pointed out that this division of responsibility would place upon the Armed Services primary responsibility for technological surprise; i.e., for an enemy using instruments of warfare of which we have no prior knowledge. (We are not stressing this point, because we believe collectors should be warned that it is quite possible for the intelligence community to overemphasize the problem of surprise. It would be quite natural for American intelligence officers today to be guided by a Pearl Harbor complex. Order of Battle intelligence is relatively unimportant in normal times and it is quite possible that our collectors are putting too much attention today on movements of troops and materiel to the detriment of other more valuable information of long-term importance.) The new Joint Technical Intelligence Subcommittee of the JCS may be the proper body to allocate authority within these general lines of division. It must be pointed out, however, that in making a national estimate, we are concerned with instrumentalities in being as well as those in process and a free flow, without reservation or exception, of both raw intelligence and evaluated intelligence from the Services to CIA would be vital despite this division of responsibility, and should be specifically directed on both intelligence and operational levels in the proposed new NSCID.

2. The Failure in Collection Activities

One of the basic deficiencies in our scientific intelligence product stems from the abysmal gaps in our knowledge of the state of research in Soviet Russia.

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This is partly because of the difficulties of penetration of research activities in the police state; is partly due to the progressive weakness in results in scientific intelligence in proportion as the analyst is removed from the collector; and, finally, is partly due to our own failure to make better use of raw material which is available to us. A summary of the sources of value to OSI is attached as Tab F. This problem can best be understood by relating the discussion and recommendations to the particular sources of raw intelligence which are of primary value to OSI:

a. Foreign documents.

Although we have today a substantial exploitation of foreign documents and although the collection of such documents should be expedited by the proposed NSCID making FDD a service of common concern (as recommended in OO Survey Report), it is nevertheless our opinion after surveying OSI that a very fertile field of information with respect to Soviet science as disclosed in Soviet documents is today being neglected. This is due partly to manpower limitations but more largely to a failure to come to grips with the problem. The present procedure is for FDD to make periodical abstracts which are then circulated among the intelligence officers who may call for full translations of interesting documents. The weakness in this procedure lies in the fact that the abstracter is not a scientist and too frequently fails to see the significance of a point of scientific interest and unintentionally disguises it in his abstract. A better procedure would be for FDD not to abstract but to list the table of contents of foreign scientific periodicals and confine abstracting and translating to specific requests. An even surer procedure would be to exploit the foreign scientific documents entirely outside the intelligence community. This

problem is being studied [redacted]

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[redacted] under an OSI sponsored project and that is the essence of his preliminary determination. Such procedure has one great virtue; namely, it makes the document available to American scientists who are just as interested in the contents as is the intelligence community. Today the processing of the document in the intelligence community results in its classification and consequent unavailability to American scientists generally. There are scientific groups aware of the Russian language located in great enough numbers throughout the United States at institutions of learning, foundations, and corporations to reduce the burden of abstracting and translating for any one group to workable proportions. There are also refugee personnel, frequently with scientific knowledge, who could be overtly used for abstracting and translating if documents were not classified. Therefore, the proposed procedure would greatly speed up the time in which the intelligence becomes available to the producer at OSI and would automatically bring to the aid of the office untold analytical ability (which is now unavailable) to appraise the significance of such intelligence. In view of the fact that the [redacted] studies are not completed, no specific recommendation is made in this report beyond the caveat that our present procedures are ineffective and that serious attention be given to the problem as soon as the [redacted] study is completed. There will be involved the working out of the mechanics for the deposit and withdrawal of documents, translations, and microfilms thereof, and mechanics for having professional organizations make better abstracts in fields where this is not now done. In certain fields of scientific interest, there are available today professional abstracts of Russian documents which are entirely satisfactory, particularly in

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chemistry. This is done under the auspices of the American Chemical Society. The abstracting in physics and biology is also reasonably good and there is an Index Medicus which indexes documents in the field of medicine. Some work is also being done at UNESCO, at the Library of Congress, and at other centers. It is hoped that the

[redacted] recommendations will point the way for the optimum use of this material.

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b. The Exploitation of Communications Plain Text

OSI meets this problem by having a substantial beachhead at AFSA representing OSI's entire office. There is, however, an AFSA rule that COMINT material cannot be used until it is translated and published. (The reason for this is that all interested parties may have the same chance at the material.) Much time could be saved by permitting language experts to work directly with the raw material to take out what they need. It is a simple matter to give such material the same security protection which all COMINT receives and an effort should be made to abolish the above rule. An "all or none" basis, such as the AFSA rule prescribes, has no substantive validity.

[redacted]

It is also important that everyone in OSI be cleared for COMINT. Today they cannot be submitted for clearance until they have first been cleared by the CIA Security Office. It should be possible for I&S to ascertain OCI's requirements and, so far as OSI is concerned, develop a set of combined requirements before the initial security clearance. This would save several weeks in clearing new OSI personnel for active duty. (There would be some few exceptions, but these are susceptible of administrative handling between AD/SI and I&S.)

Recommendation

That AFSA be requested to amend its rule in denying COMINT material to OSI until it is translated and published; and that OCI give I&S its requirements for COMINT clearance; and that I&S be instructed to develop combined requirements applicable to all personnel to be cleared for OSI duty. *

c. Covert Collection

The best covert collection from the OSI point of view has been by OSO cooperation with the [redacted] where the analyst [redacted] has direct contact with the manager of the field collection. A summary of foreign collection activities is attached as Tab G. In other areas, however, OSI coordinates its requirements with other agencies and offices which may be interested. The requirement then goes to TSS at OPC which goes back over the same ground and recoordinates. In rephrasing the requirement, non-scientific personnel are apt to change the significance or the emphasis. Access of the OSI analyst directly with the desk officer who sends the requirement out would assure the requirement going to the collector in a more satisfactory form from the OSI point of view.

Recommendation

That DD/I work out with DD/P a procedure which would permit the closest possible contact (consistent with security) between the OSI analyst and the ultimate collector in the covert field.

d. Overt Interrogation

One of the most important sources of scientific intelligence to date has been the

[redacted]

have particular information concerning Soviet activities. This collection has been so

* Has been done, by DD/I, since this study was made.

improved with the OSI [redacted] 25X6
 and with the set-up of a scientific liaison
 branch at [redacted] OO; that proper 25X6
 exploitation of these sources depends today
 almost exclusively upon the amount of effort
 devoted to it. With respect to other overt
 sources, principally the accumulated knowledge
 of American scientists, the office has a full
 and adequate program of consultants and
 research projects which should not be expanded
 until they can be appraised on their present
 levels.

Recommendation

No recommendation.

e. Technical Collection

The use of instruments of science to collect scientific intelligence is particularly fruitful in the electronics and atomic energy fields.

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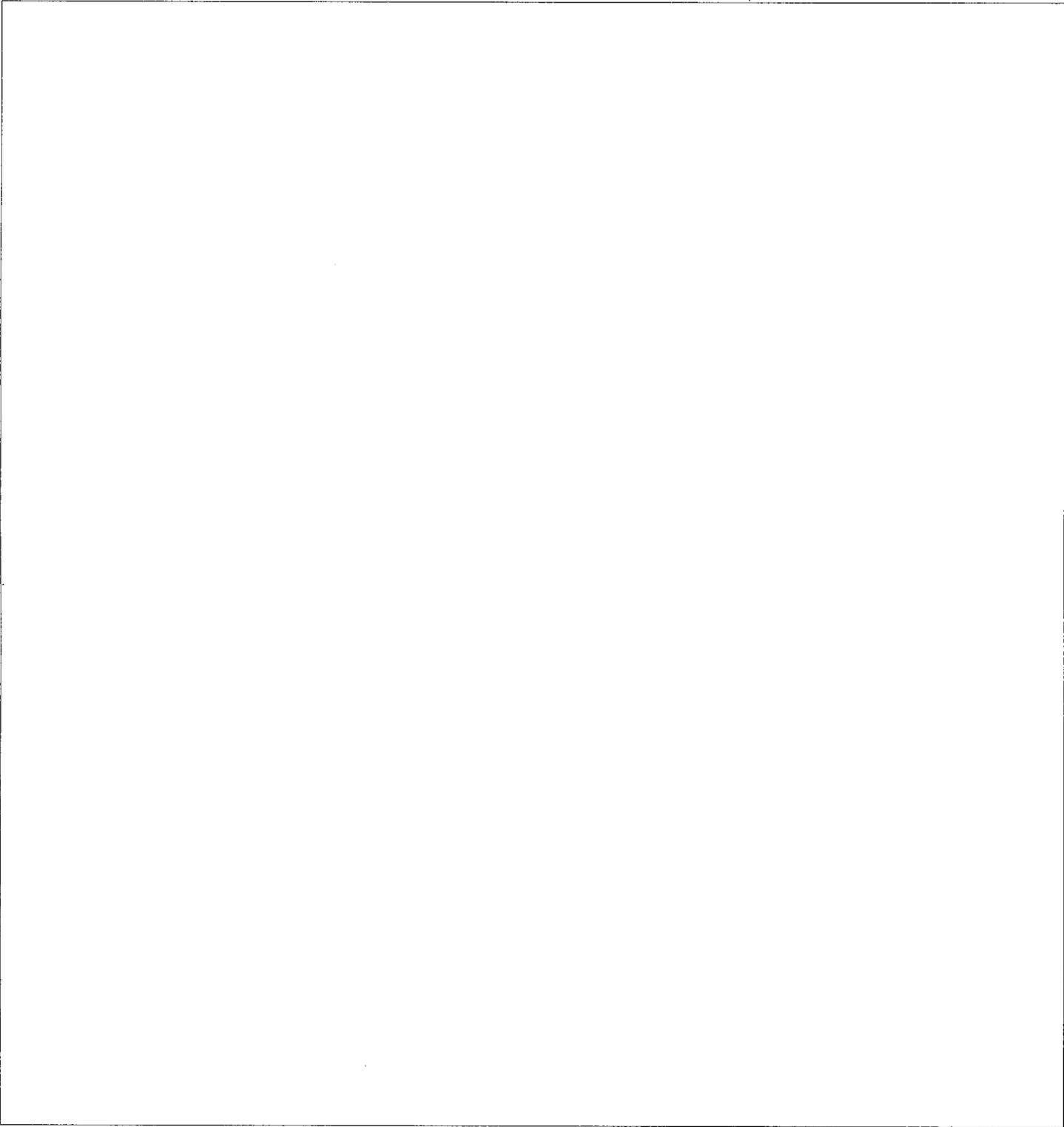
Liaison for intelligence purposes between OSI and [redacted] is now satisfactory. The effectiveness of the collection is not satisfactory. The Air Force did not accept OSI's program (later surprisingly confirmed by a top Brookhaven report) as to the analysis to be made by A-2 of the [redacted] 25X6

[redacted] It is clear 25X6
 from the independent, unsponsored Brookhaven report that, had the analysis been made as recommended, we could have learned much that we do not know about the Soviet atomic energy development.

[redacted] 25X6

Recommendation

You cannot improve this type of failure except by the education which the failure provides. No specific recommendation.



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A still further recommendation depends upon the future decisions with respect to setting up a world-wide independent communications system for CIA. It is understood that such a program is now under consideration in our Commo Division. If accepted, we believe it would then be desirable for OSI to make independent observations at such communications centers as may be established.

(2) Advancer Project

This project gives OSI serious concern, not primarily because of its initial object of assisting the Voice of America but because the very jamming facilities which are interfering with VOA could, in the event of war, jam and destroy our entire global communications system. OSI considers it very important that we set up direction finders and learn all there is to know about this jamming activity.

Recommendation

It is recommended that DD/I undertake to break the log jam on the Advancer Project and that proceeding with this project under whatever auspices be made a matter of highest priority for DD/I.

II.

OTHER PROBLEMS

The following problems are secondary in the sense that their solution is substantially within the capabilities of this Agency.

1. Operations Intelligence

OSI deals primarily with the intelligence groups in the other IAC agencies. Frequently the greatest competence is not in the intelligence officers but in

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operations officers or in the technical services. In some branches of OSI, effective liaisons have been established on this basis where the operations officers have readily reciprocated for briefings and other services rendered to them by OSI. We have found, however, that intelligence collected within the Agency, by OSO, for example, is frequently given to the operations division of the Services on exclusive terms so that the Service is not permitted to give that intelligence back to OSI. Proper liaison with such operations group is then impeded. It is also sometimes true that intelligence of interest to operational divisions comes to OSI on a "CIA Only" basis because of its sensitive source. This results in a holding out of information from the Services which is undesirable and not conducive to a free two-way exchange.

Recommendation

That DD/I establish mechanics for sanitizing COMINT scientific intelligence which would be of interest to operating divisions of the Services and work out with DD/P mechanics so that scientific operating intelligence by OSO to the Services is available to OSI.

2. Optimum Use of Consultants

We are frequently using consultants inefficiently. The case has actually arisen of one consultant working for three offices of CIA, such as OPC, OSI and OCO, knowing that what he was doing for one would help the other but reticent, for security reasons, to disclose his mission and the knowledge derived from it on an all-Agency basis. It would help if mechanics were established by which fully cleared officers of each division could assess such a problem.

Recommendation

See 4. below.

3. Optimum Exploitation of Contacts with Other Agencies

There are many cases in which the best access to another IAC agency with which OSI must consult is through a man in a CIA office other than OSI. For example, the best and freest access to Camp Detrick, the Army's biological research center, is available to a man in the

TSS Division under DD/P. The needs of the Biological Division of OSI in liaison with Camp Detrick could better be served by this man providing the proper introduction and taking the OSI representative with him, than by successive visits to Detrick from different parts of the Agency.

Recommendation

See 4. below.

4. Intra-CIA Liaison

Generally speaking, OSI has excellent working relations with other offices within CIA. It is clear, however, that there is much duplication and loss of time and, in some cases, downright confusion arising out of the working level contacts by which these relationships have been achieved. It is recognized that this is not entirely a bad thing because cross-fertilization within the intelligence community has definite advantages. It is nevertheless thought that some attempt better to coordinate cross-contacts in the scientific field should be undertaken. It is wasteful, for example, for TSS to staff itself to perform functions where OSI already has the competence, and vice versa.

Recommendation

It is recommended that under the chairmanship of the head of the Support Division of OSI, an intra-agency liaison committee, consisting of one representative of OPC, OSO, TSS, Communications, the communications branch of ORR, and the scientific branch of OO, be created on a six-months' basis to explore the possibility of greater coordination among their several offices. This committee could work out mechanics for making optimum use of consultants referred to in 2. above and for exploring the most useful contacts with non-CIA agencies (3. above).

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5. Delays in Receiving Raw Material

In the course of this survey, the point was made in several divisions and branches that what seemed like unconscionable delays were normal in the transmission of raw intelligence from the collector to the analyst. In a few checked cases, it appeared that there was an average

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delay of from 12-15 days between the receipt of the raw material at OCD and its delivery on the desk of the OSI analyst and that even longer periods elapsed between the receipt of the material in the collection office and its delivery to OCD.

Recommendation

As it is known that DD/I is well aware of this problem and working on it, it was not more thoroughly explored and no recommendation is offered beyond that DD/I consider, with respect to information transmitted

inaugurating a weekly telecon over the circuit.

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6. Delay in Requirements Reports

It was something of a shock, after finding in the collection offices a demand for more specific requirements, to hear in OSI complaints of specific requirements which were ignored for months, particularly in [redacted] As this situation has already been corrected at our request so that hereafter regular reports will be made that the information is or is not still being sought and is or is not within the capacity of the collector, no recommendation need be made here.

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7. Medical Intelligence

Our Medical Intelligence Division, like so many other of our producing areas, is working pretty much in a vacuum so far as reliable raw intelligence is concerned. It is quite possible that closer cooperation with the CIA Medical Staff would result in raw intelligence from our medical support units abroad.

Recommendation

That DD/I investigate the possibility suggested above and initiate such action as he may deem desirable.

III.

SPECIAL STRENGTHS OF OSI

There are many things to commend with respect to the organization, personnel, and operations at OSI, and the emphasis in this survey on problems should not cause them to be overlooked. The purpose of this survey, however, was to be constructively helpful on problems, not to be laudatory. Special mention should be made, nevertheless, of the thoughtfulness and care given throughout the division to the evaluations provided for collectors of raw material. Nothing can assist a collector more than a careful, thoughtful and complete evaluation of his material. The standards set for this practice in OSI are distinguished, and conformed to in all divisions. It should be stated that Dr. Chadwell, Assistant Director, and [redacted] his Deputy, are completely conversant with their task, well aware of the deficiencies which exist in their division, and thoughtfully interested in improving the contributions of their division to the intelligence community. They are staffed with high caliber intelligence officers [redacted] and have built particularly strong divisions in Weapons [redacted] Physics and Electronics under [redacted] and Nuclear Energy [redacted]

A point was made in our survey of ascertaining whether OSI was keeping fully abreast of American science and technological developments because one guide to what an enemy may do is what we are doing. We found that all the divisions are aware of the importance of such activity, and most of them stated that they are giving as much time as possible to checking American developments through the Research and Development Board, consultants, operational branches of the Services, and other valuable sources.

Before closing this report, we wish to offer two recommendations relating to personnel:

1. To prevent important personnel from dying professionally, it is recommended that as a policy we attempt to send our scientists at least once annually to a professional meeting in their respective fields.
2. That the needs of the office for personnel at the levels of chief of division, deputy chief of division, and heads of branches be circulated periodically among our approved consultants who may be of assistance in obtaining scientifically competent intelligence officers.

[redacted]
Consultant

Stuart Hedden
Inspector General

